

Omaha Public Power District
444 South 16th Street Mall
Omaha, Nebraska 68102-2247
402/636-2000

March 2, 1992
LIC-91-055L

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 2055

Reference: Docket No. 50-285

Gentlemen:

Subject: Licensee Event Report 92-004 for the Fort Calhoun Station

Please find attached Licensee Event Report 92-004 dated March 2, 1992. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(ii). If you should have any questions, please contact me.

Sincerely,

W. G. Gates
W. G. Gates
Division Manager
Nuclear Operations

WGG/lah

Attachment

c: R. D. Martin, NRC Regional Administrator
D. L. Wigginton, NRC Senior Project Manager
R. P. Mullikin, NRC Senior Resident Inspector
S. D. Bloom, NRC Project Engineer
INPO Records Center

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PDR ADOCK 05000285
S PDR

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT DIVISION (P-502), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (2150-0126), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Fort Calhoun Station Unit No. 1

CONFIDENTIAL NAME (b) (6)

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775110

Unplanned Reactor Protective System (RPS) Actuation

EVENT DATE (6)			LSP NUMBER (6)			REPORT DATE (7)			CITY/ST FACILITY/ID INVOLVED (6)																				
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MO	DAY	YEAR	FACILITY NAME					DOCKET NUMBER(S)															
0	2	0	1	9	2	9	2	0	0	5	0	0	3	0	2	9	2	N					0	5	0	0	0	1	1
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OPERATING MODE (6)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 18 C.F.R. 101.10 (C.F.R. 101.10). Check one or more of the following (11)																										
3			20.402(b)			20.405(b)			X 20.503(a)(2)(iv)			78.71(b)																	
POWER LEVEL (3)			20.405(a)(1)(i)			50.56(a)(1)			50.73(a)(2)(iv)			78.71(a)																	
0			20.405(a)(1)(ii)			50.36(a)(6)			50.73(a)(2)(v)			OTHER Specify in Abstract below and in Text, NRC Form 305a																	
0			20.405(a)(1)(iii)			50.73(a)(2)(i)			50.73(a)(2)(vii)(A)																				
0			20.405(a)(1)(iv)			50.73(a)(2)(vii)(B)			50.73(a)(2)(viii)(B)																				
			50.405(a)(1)(v)			50.73(a)(2)(ix)			50.73(a)(2)(ix)																				

NAME		LICENSEE CONTACT FOR THIS LEA (11R)		TELEPHONE NUMBER	
Keith A. Voss, Shift Technical Advisor				AREA CODE	
				4102	513131-1619311

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (18)														
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDHS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDHS				
SUPPLEMENTAL REPORT EXPECTED (14)									EXPECTED SUBMISSION DATE (18)		MONTH	DAY	YEAR	
<input type="checkbox"/> YES If yes, complete EXPECTED SUBMISSION DATE					<input checked="" type="checkbox"/> NO									

ACBTRAC: 1.1 mil to 1.4X spaces, i.e., approximately fifteen single-space typewritten lines. (18)

On February 1, 1992, while Fort Calhoun Station was in Mode 3 (Hot Shutdown) preparing for a planned refueling outage, Operations personnel were preparing to cooldown and depressurize the Reactor Coolant System. Procedure OI-RC-4 "Reactor Coolant System (RCS) Normal Shutdown", directed them to place the zero power mode bypass switch for each of the Reactor Protective System (RPS) channels to "bypass" when the reactor power was below 10E-4 percent. At 1930 hours, Reactor Coolant Pump (RCP) RC-3A was shut down to start RCS cooldown and the RPS initiated a reactor trip signal due to RCS low flow. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(iv).

The cause of this event was procedural non-compliance. The procedure steps in OI-RC-4 had not been completed in the proper sequence (i.e., Operations personnel performed and signed-off the step for bypassing the low flow trip on the RPS after securing the first RCP).

Although this event resulted in an RPS actuation, the affect on the plant was minimal. Since the plant was in Mode 3, the safety consequences of this event were minimal.

Corrective actions include reinforcing the importance of procedural compliance to operations personnel and reviewing the adequacy of Standing Order R-11 "Notification of Significant Events", for reportability determination of Emergency Safeguards Features/RPS actuations.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REGULATION, 36.9 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-500), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20540, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (3)			PAGE (4)	
		YEAR	SEQUENTIAL NUMBER	PREVIOUS NUMBER		
Fort Calhoun Station Unit No. 1	0 1 0 0 0 2 8 5 9 2	0 0 5	0 0	0 2	OF	0 3

TEXT (If more space is required, use additional NRC Form 880A's)(17)

The Reactor Protective System (RPS) monitors certain critical plant operating parameters and compares them to predetermined setpoints. If one or more of the monitored parameters reaches the setpoint on two of the four channels, the RPS will initiate a reactor trip. There are twelve different reactor trips that can be initiated from the RPS. The trip unit that is of interest for this event is Reactor Coolant System (RCS) Low Flow.

The low flow trip provides protection against departure from nucleate boiling by maintaining adequate coolant flow to ensure that the departure from nucleate boiling ratio (DNBR) remains above 1.18 as required by the Technical Specifications.

The pre-trip for the RCS low flow is set at 97 percent of nominal core flow. The trip setpoint is 95 percent of nominal core flow. During normal operation, the trip setpoint will ensure that the reactor cannot operate when the flowrate is less than 93 percent of the normal flowrate including instrument uncertainties.

Since operation with all four reactor coolant pumps (RCP) is only permitted when the RCS is above 500 degrees Fahrenheit, the low flow trip can be bypassed when the reactor power is below 10E-4 percent as sensed by the nuclear instrumentation (NI) channels. This bypass is called the zero power mode bypass and allows shutdown/cooldown without tripping the reactor. There are four bypass keys, one for each channel of the RPS, which are used to bypass each channel. The zero power mode bypass will drop out automatically when the reactor power increases above 10E-4 percent.

When the RPS identifies a condition that requires a reactor trip, it automatically initiates a trip signal. This trip signal will cause the following to occur: de-energize the Control Element Assembly (CEA) clutch power supplies which will drop the CEAs into the core; start the emergency diesel generators; trip the turbine; and, start the sequence of event recorders.

On February 1, 1992, Fort Calhoun Station (FCS) was shutting down in preparation for a planned refueling outage. The plant was in Mode 3 (Hot Shutdown) at 532 degrees Fahrenheit and 2100 psia and Operations personnel were preparing to cooldown and depressurize the RCS. During this cooldown, data was being collected to determine which combination of RCPs would provide the best pressurizer spray flow with less than four pumps running. The System Engineer provided the operating crew with an Engineering Action Plan that described the data that should be taken. This action plan was to be worked in conjunction with the approved plant shutdown procedure OI-RC-4, "Reactor Coolant System (RCS) Normal Shutdown".

While Operations personnel started cooling the RCS, OI-RC-4 Step 6.1.6 directed the operator to place the zero power mode bypass switch for each of the RPS channels to "bypass" when the reactor power was below 10E-4 percent. This step was to bypass the RPS low flow trip unit. At 1930 hours, RCP RC-3A was shut down to start the RCS cooldown. At that time, the RPS initiated a reactor trip signal due to RCS low flow. At 1939 hours, the zero power mode bypass switches were placed in "bypass". Step 6.1.6 was initiated as completed by the Licensed Senior Operator (LSO), however, the procedure steps had not been performed in the proper sequence. This sequence resulted in a valid RPS actuation signal due to low flow in the RCS after the RCP was secured, without the low flow trip units being bypassed by the zero power mode bypass switches.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 86.0 HRS. FORWARDED COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-520), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (3)	PAGE (3)
Fort Calhoun Station Unit No. 1		YEAR INCREMENTAL REVISION	
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TEXT (If more space is required, use additional NRC Form 308A's) (17)

At the time of this event, Operations personnel did not consider this event as reportable since the plant responded as expected to a low flow condition. Upon further review of this event, the Plant Review Committee determined that this event was reportable at 1100 hours on February 3, 1992. The four hour report was completed at 1141 hours on February 3, 1992, pursuant to 10 CFR 50.72(b)(2)(ii). This report is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(iv).

A Human Performance Evaluation System (HPES) report identified the cause of this event as procedural non-compliance. The procedure (OI-RC-4) steps had not been performed in the proper sequence (i.e., Operations personnel performed and signed-off the step for bypassing the low flow trip on the RPS after they secured the first RCP). This event would not have occurred if the switch had been placed in "bypass" prior to securing the first RCP. Further personnel error occurred after the RPS actuation, when Operations personnel did not realize that this was a reportable event, thus not making the required four-hour report to the NRC at the time of the event.

This event occurred while the plant was in Mode 3 preparing for a refueling outage and nuclear safety was not affected. Although this event resulted in an RPS actuation, the effect on the plant was minimal. This event was a result of securing an RCP in preparation for cooling down and depressurizing the PCS. However, the securing of an RCP is not performed while the plant is in power operations, unless the pump shows signs of imminent failure. If this event had occurred during power operations, the RPS trip signal would have resulted in the shutdown of the reactor. All systems responded as designed during this event. The diesel generators did not start during this event because the Diesel Test Switches for both diesels were open. The CEAs had previously been fully inserted.

The following corrective actions will be taken:

1. This event will be discussed with operations personnel (licensed and non-licensed) to reinforce the importance of procedural compliance and proper procedural usage. This training will be completed by May 1, 1992.
2. Standing Order R-11 "Notification of Significant Events" will be reviewed and revised if needed, to ensure that adequate guidance is provided to personnel to determine reportability of ESF/RPS actuations. This review will be completed by June 1, 1992.

There have been other reported inadvertent actuations of the Engineered Safeguards Features/Reactor Protective System during shutdowns, however, this is the first LER due to the actuation of the low RCS flow trip unit.